



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,875	12/11/2001	Ross Halgren	47574/DBP/C664	2381
23363	7590	11/04/2004	EXAMINER	
CHRISTIE, PARKER & HALE, LLP			LE, TRAN Q	
PO BOX 7068			ART UNIT	
PASADENA, CA 91109-7068			PAPER NUMBER	
			2633	

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/014,875

Applicant(s)

HALGREN, ROSS

Examiner

Tran Q. Le

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Drawings

1. The drawings are objected to under 37 CFR 1.83(a) because they fail to show two pairs of optical fibers (58, 60, fig. 3 and 58, 60, fig. 4), wherein each fiber of the pairs carries unidirectional transmission, with the transmission directions of the two fibers of each pair being opposite to each other for bi-directional transmission (p. 6, lines 5-8), as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will

Art Unit: 2633

be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

a) Reference numerals 134(p. 8, line 28), 136(p. 8, line 28), and 138(p. 9, line 7) are not shown in fig. 5.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to under 37 CFR 1.83(a) because the structural elements (130, 140, 141, 150, 152, 154, 156, 158, 160, 162, 166, fig. 6, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, fig. 3, and 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, fig. 4) are merely labeled with identifying numbers. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Since these elements are illustrated as blank boxes which do not

Art Unit: 2633

correspond to well known graphical representations, applicant is required to provide suitable legends under 37 CFR 1.121(d) to avoid abandonment of the application.

Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claims 1 and 10, it is not clear what is meant by "or, where one of its nearest neighboring nodes is one of the end nodes, to said one end node and to its 2nd nearest neighboring primary or end node on the other side".

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 2, 4, 7-11 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Burger (US Patent No: 6,477,172).

Regarding claims 1 and 10, as it is understood in view of above 112 problem, Burger discloses a linear or bus optical network (50, fig. 1, i.e. the linear network, hereafter, can be thought of as a logical ring network within a physical linear cable as disclosed in figure 1 of Burger's invention), comprising: first (12, fig. 1) and second (18, fig. 1) end nodes and a plurality of primary nodes (14, 16, 22, fig. 1) disposed, in use, between the end nodes, wherein each end node is connected to its nearest neighboring primary node and its second nearest neighboring primary node (i.e. figure 1 shows end node 12 is connected to its nearest neighboring primary node 14 and its second nearest

Art Unit: 2633

neighboring primary node 22, whereas end node 18 is connected to its nearest neighboring node 16 and its second nearest neighboring primary node 22), and wherein each primary node is connected to its second nearest neighboring primary or end node on either side (fig. 1 and col. 1, lines 43-45)(i.e. figure 1 shows the primary node 14 is connected to the end node 12 on one side, and to the second nearest neighboring primary node 16 on the other side. Similarly, the primary node 16 is connected to the end node 18 on one side, and to the second nearest neighboring primary node 14 on the other side, and so on). Regarding claim 10, Burger discloses a method of conducting transmission in a linear of bus optical network (12a, 12b, 14a, 14b, 16a, 16b, 18a, 18b; 22a, 22b, fig. 1) as claimed in claim 1 comprising steps of: transmitting from each end node to its nearest neighboring primary node and to its 2nd nearest neighboring primary node (i.e. arrows 12a and 12b show transmitting paths from end node 12 to its nearest neighboring primary node 14 and its 2nd nearest neighboring primary node 22, and arrows 18a and 18b show transmitting paths from end node 18 to its nearest neighboring primary node 16 and its 2nd nearest neighboring primary node 22, respectively), and transmitting from each primary node to its 2nd nearest neighboring primary or end node on either side (col. 1, lines 43-67, and col. 3, lines 33-55) (fig. 1, i.e. arrows 14b and 14a show transmitting paths from primary node 14 to its 2nd nearest neighboring primary node 16 or end node 12, and arrows 16b and 16a show transmitting paths from end node 16 to its 2nd nearest neighboring primary node 14 or end node 18, respectively, and so on).

Regarding claims 2 and 11, the optical connection between neighboring nodes is effected through a pair of optical fibers (fig. 1, i.e. links 32, 34 and 36 in figure 1 can be interpreted as parts of one fiber of the pair, and links 38, 40, 42 in figure 1 can be interpreted as parts of the other fiber of the pair), and wherein each fiber of the pair is arranged, in use, to carry bi-directional transmission (col. 3, lines 33-35, and fig. 1, i.e. double arrows on each link shows bidirectional transmission between nodes), and wherein each primary node is connected to only one fiber of the pair on each side (col. 3, lines 33-35, and fig. 1, i.e. primary node 14 is connected to fiber link 32 and fiber link 34, both of which are parts of one fiber of the pair, on each side), and wherein each end node is connected to both fibers of the pair (col. 3, lines 33-35, and fig. 1, i.e. end node 12 is considered being connected to both fibers since each fiber link 32 or 42 is a part of different fibers; similarly, end node 18 is considered being connected to both fibers since each fiber link 36 or 38 is a part of different fibers). Since the protected linear network can be interpreted as a logical ring network within a physical linear cable, a pair of optical fibers described in the applicant's words is actually a single fiber connecting the primary and end nodes together in a ring configuration as shown in ring optical network 50, figure 1. In other words, when the linear optical network of the applicant is put in the view of Burger's ring optical network, each primary node or each end node is actually connected to its neighboring nodes by a single bi-directional fiber on each side. Regarding claim 11, Burger discloses a method of transmitting between neighboring nodes utilizing a pair of bi-directional optical fibers (12a and 14a, 14b and 16b, 16a and 18a, 18b and 20b, 20a and 22a, 22b and 12b, fig. 1, col. 1, lines 43-67, and col. 3, lines

Art Unit: 2633

33-55) (i.e. a pair of bidirectional optical fibers in the linear optical network is inheritably understood the same way as explained in claim 2 as a single bidirectional fiber connecting neighboring nodes together in a ring optical network) and wherein each fiber of the pair carries bi-directional transmission, and wherein each intermediate node is connected to only one fiber of the pair on each side, whereby the intermediate nodes are alternately connected via single fiber connections, and wherein each end node is connected to both fibers of the pair.

Regarding claims 4 and 13, Burger discloses a secondary node (20, fig. 1) connected in-line between two connected ones of the end or primary nodes (fig. 1), therefore, the step of transmitting between two connected ones of the end or primary nodes comprises transmitting from the secondary node to the other nodes in the network (fig. 1).

Regarding claim 7, Burger teaches that his network is arranged as a SONET or SDH network (col. 2, lines 65-67 and col. 3, lines 1-10).

Regarding claims 8 and 9, Burger discloses one of the end nodes being connected to a core or a metro optical network (52, fig. 1). Note that the Receiving node 12 is shown being connected to any External network, therefore, it can be interpreted by the examiner as being a core or metro optical network. Similarly, as to claim 9, a protected optical ring network can also be viewed as being the External element 52 in the cloud shape in figure 1.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3, 5, 6, 12 and 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Burger (US Patent No: 6,477,172) in view of Adams (US Patent No: 6,785,472).

Regarding claims 3, 5, 6, 12 and 14, Burger differs from the claimed invention in that Burger does not disclose the optical connection and transmitting paths between the nodes being effected through at least two pairs of optical fibers, and wherein each fiber of the pairs is arranged, in use, to carry uni-directional transmission, with the transmission directions of the two fibers of each pair being opposite to each other, and wherein each primary node is connected to one of the pairs on each side, and wherein each end node is connected to both fiber pairs. Furthermore, Burger does not disclose each of the nodes being arranged, in use, to regenerate the transmission signal and the network being arranged as a WDM network. Adams, from the same field of endeavor, teaches a linear or bus optical network (fig. 4, i.e. the linear optical network is shown in view of a ring optical network with two end nodes being 300 and 303, and a plurality of primary nodes being 301, 302, 304, and 305) with the optical connection between neighboring nodes is effected through two pairs of optical fibers (311-316, 321-326, fig.

Art Unit: 2633

4) (i.e. since the protected linear network can be interpreted as a logical ring network within a physical linear cable, therefore, two pairs of optical fibers described in the applicant's words is actually a pair of fibers connecting the primary and end nodes together in a ring configuration as shown in ring optical network in figure 4), and wherein each fiber of the pairs (i.e. inner links 311, 312 and 313 or outer links 321, 322, 323 in figure 4 can be interpreted as parts of one fiber of the pairs, and inner links 314, 315, and 316 or outer links 324, 325, and 326 in figure 4 can be interpreted as parts of the another fiber of the pairs) is arranged, in use, to carry unidirectional transmission (i.e. each link 311-316 or 321-326 in fig. 4 carries unidirectional transmission), with the transmission directions of the two fibers of each pair being opposite to each other (col. 4, lines 28-33)(i.e. inner links 311-316 in fig. 4 carry unidirectional transmission in clockwise direction and outer links 321-326 in fig. 4 carry transmission in counterclockwise direction), and wherein each primary node is connected to one of the pairs on each side (fig. 4, i.e. primary node 301 is connected to one pair 311, 321 on one side and to another pair 312, 322 on other side), whereby the primary nodes are alternately connected via a pair of unidirectional fibers for bi-directional transmission (figure 4, i.e. links 311-313 and 321-323 form a pair of unidirectional fibers for bidirectional transmission, and links 314-316 and 324-326 form another pair of unidirectional fibers for bidirectional transmission), and wherein each end node is connected to both fiber pairs (fig. 4 and col. 4, lines 28-33). Note that when the linear optical network is put in the view of Adams' ring optical network, each end node (300, 303, fig. 4) is only connected to a pair of fibers on each side, whereas, when the ring

Art Unit: 2633

optical network is put in the view of the linear optical network, each end node is connected to both pairs of fibers. Adams further teaches that each of the nodes in the linear optical network is arranged, in use, to regenerate the transmission signal (col. 6, lines 21-27). Adams also discloses that the linear network is arranged as a WDM network (col. 1, lines 53-55 and col. 2, lines 7-13). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to be motivated to incorporate two pairs of bidirectional fibers instead of one in the transmission paths of Burger in order to provide a dual-ring, bidirectional optical fiber transmission system that interconnects a plurality of nodes such that multiple WDM channels can be transmitted bidirectionally.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Boer (US Patent No: 6,400,859) is cited to show a linear or bus optical network (fig. 1, i.e. the linear optical network is shown in view of a bidirectional line switched ring) including a first (NE1, fig. 1) and second (NE4, fig. 1) end nodes, and a plurality of primary nodes (NE2, NE3, NE5, and NE7, fig. 1) disposed, in use, between the end nodes, wherein each end node is connected to its nearest neighboring primary node and its 2nd nearest neighboring primary node (fig. 1, i.e., end node NE1 is connected to its nearest neighboring primary node NE2 and its 2nd nearest neighboring primary node NE7, whereas, end node NE4 is connected to its nearest neighboring primary node NE3 and its 2nd nearest neighboring primary node NE5), and wherein each primary node is

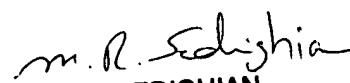
Art Unit: 2633

connected to its 2nd nearest neighboring primary or end node on either side (fig. 1). Boer further shows a secondary node (NE6, fig. 1) connected inline between two connected ones of the end or primary nodes (fig. 1).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tran Q. Le whose telephone number is (571)272-2046. The examiner can normally be reached on 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


M. R. SEDIGHIAN
PRIMARY EXAMINER